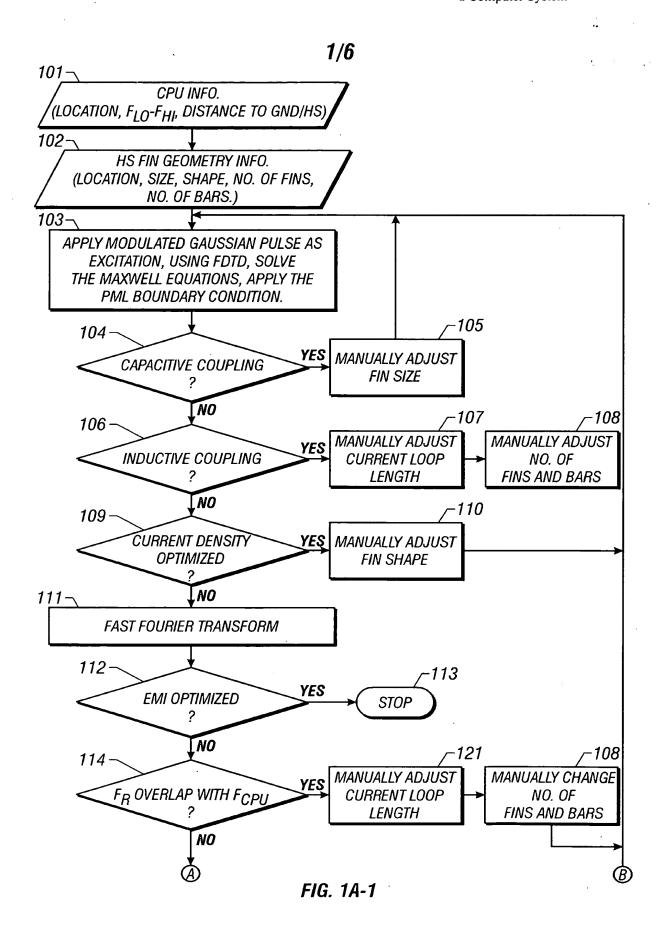
Attorney Docket No.: M-9699 US
First Inventor: n Zhang
Title: Calculated of Radiation Emitted by
a Computer System



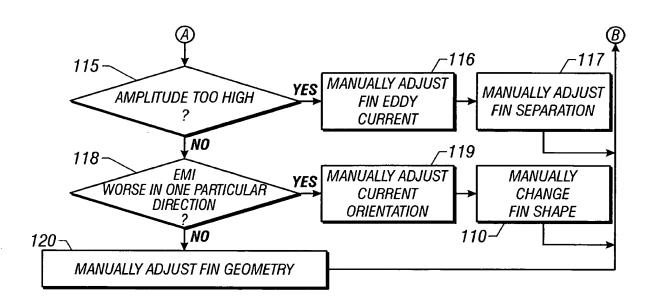
Attorney Docket No.: M-9699 US

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HS =HEATSINK F_{LO}-F_{HI} =FREQUENCY WINDOW RANGE

F, = RESONANCE FREQUENCY OF THE HEATSINK

PML = PERFECT MATCHED LAYER

FDTD = FINITE DIFFERENCE IN TIME DOMAIN

GND = GROUND

FFT = FAST FOURIER TRANSFORM

FIG. 1A-2

GND = GROUND

FFT = FAST FOURIER TRANSFORM

Attorney Docket No.: M-9699 US First Inventor: Lan Zhang Title: Calculation of Radiation Emitted by a Computer System 3/6 101-CPU INFO. (LOCATION, F_{LO}-F_{HI}, DISTANCE TO GND/HS) 102-HS FIN GEOMETRY INFO. (LOCATION, SIZE, SHAPE, NO. OF FINS, NO. OF BARS.) 103-APPLY MODULATED GAUSSIAN PULSE AS EXCITATION, USING FDTD, SOLVE THE MAXWELL EQUATIONS, APPLY THE PML BOUNDARY CONDITION. 111-FAST FOURIER TRANSFORM 112-113 YES EMI ACCEPTABLE **STOP** NO -121 -108 114-MANUALLY ADJUST MANUALLY CHANGE YES FR OVERLAP WITH FCPL **CURRENT LOOP** NO. OF **LENGTH** FINS AND BARS NO -116 115-MANUALLY ADJUST YES MANUALLY ADJUST AMPLITUDE TOO HIGH FIN EDDY FIN SEPARATION **CURRENT** -119 117-NO. 118-WORSE IN ONE PARTICULAR MANUALLY ADJUST MANUALLY **CURRENT CHANGE** DIRECTION ORIENTATION FIN SHAPE 110-NO 120 -MANUALLY ADJUST FIN GEOMETRY $\overline{HS} = HEATSINK$ F_{LO} - F_{HI} = FREQUENCY WINDOW RANGE =RESONANCE FREQUENCY OF THE HEATSINK FIG. 1B PML = PERFECT MATCHED LAYER FDTD =FINITE DIFFERENCE IN TIME DOMAIN



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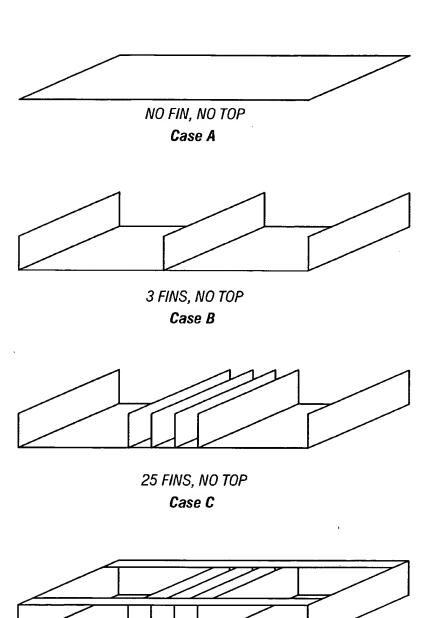
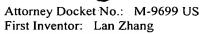


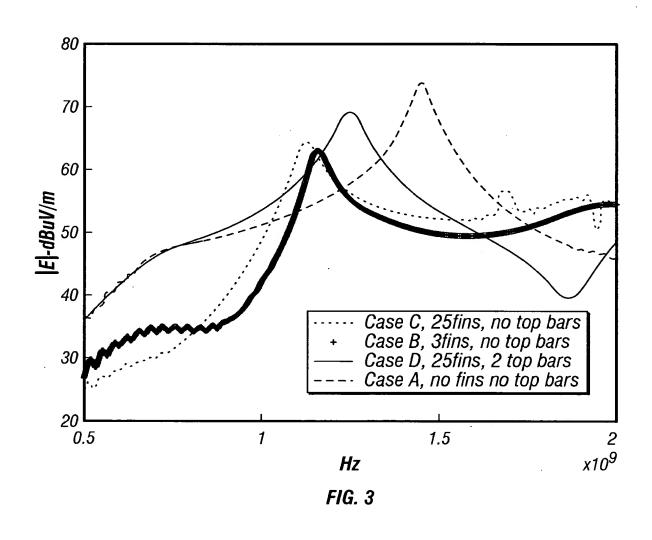
FIG. 2

25 FINS, 2 TOP BARS Case D



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